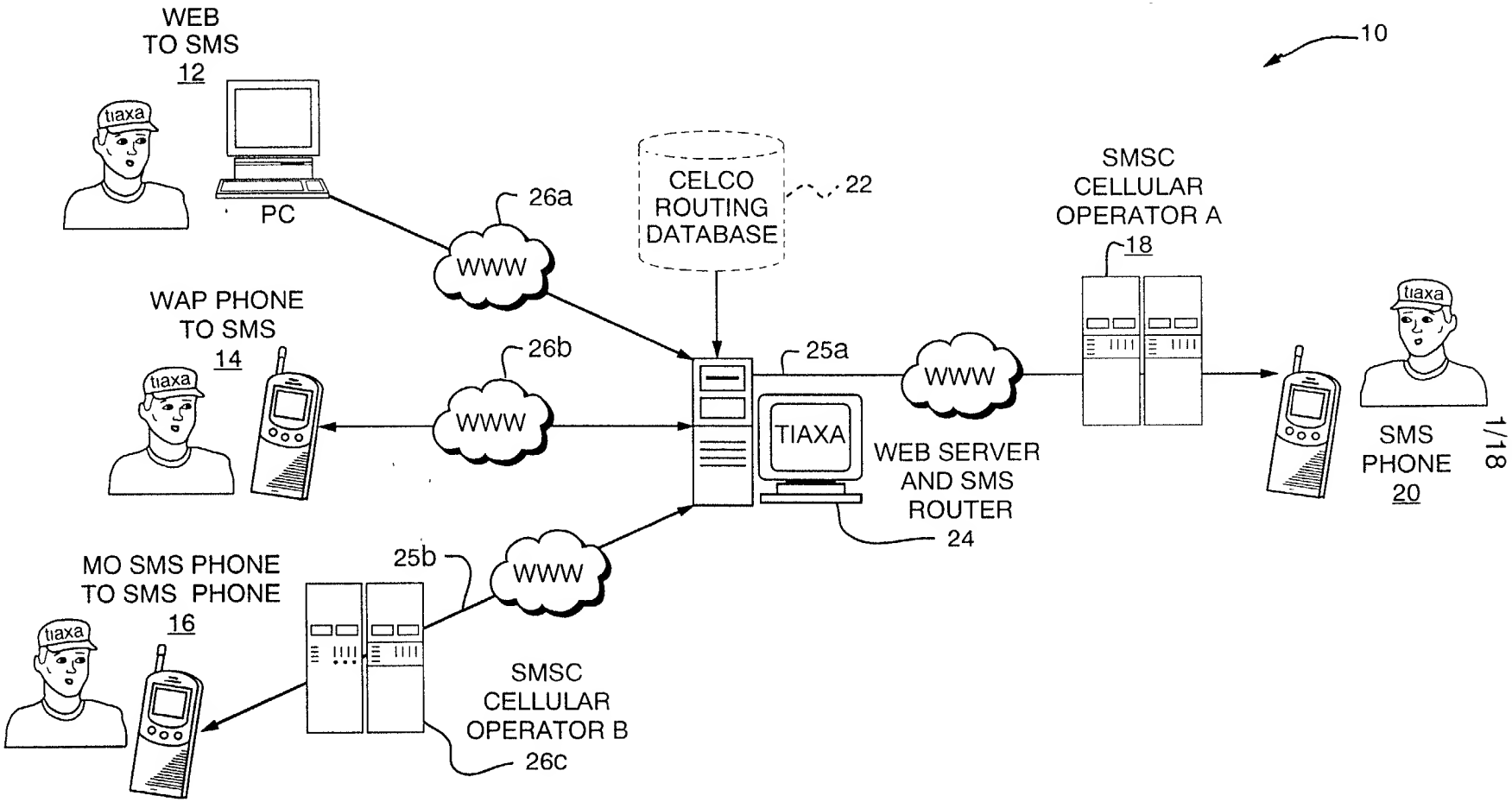
WEB
TO SMS
12
tiaxa
PC
26a
WWW
CELCO
ROUTING
DATABASE
22
SMSC
CELLULAR
OPERATOR A
18
10
WAP PHONE
TO SMS
14
tiaxa
26b
WWW
25a
WWW
TIAXA
WEB SERVER
AND SMS
ROUTER
24
tiaxa
SMS
PHONE
20
MO SMS PHONE
TO SMS PHONE
16
tiaxa
25b
WWW
SMSC
CELLULAR
OPERATOR B
26c

FIG. 1

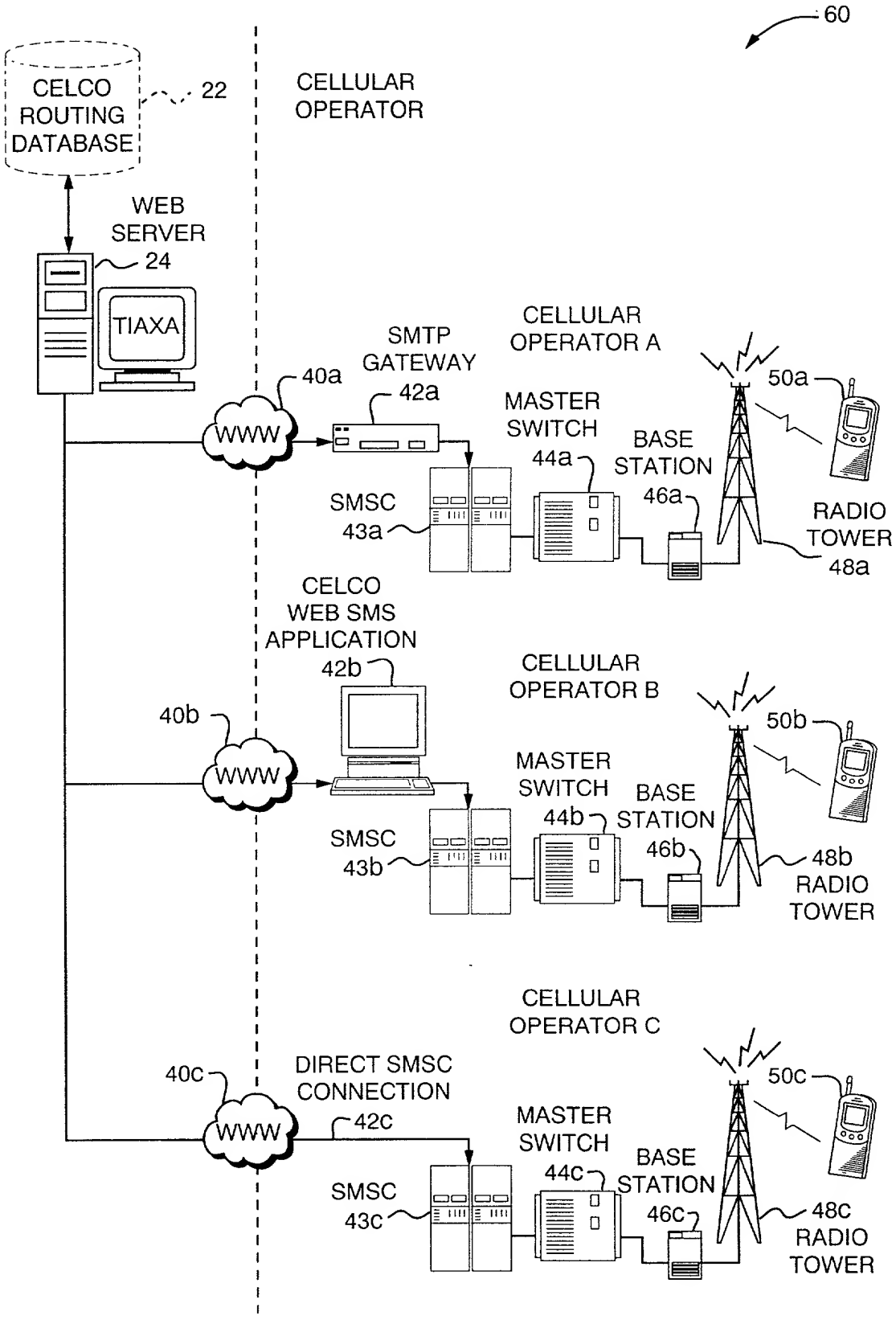
60
CELCO ROUTING DATABASE
22
CELLULAR OPERATOR
WEB SERVER
24
TIAXA
SMTP GATEWAY
40a
42a
CELLULAR OPERATOR A
MASTER SWITCH
44a
BASE STATION
46a
50a
WWW
SMSC
43a
RADIO TOWER
48a
CELCO WEB SMS APPLICATION
42b
CELLULAR OPERATOR B
40b
50b
WWW
MASTER SWITCH
44b
BASE STATION
SMSC
43b
46b
48b
RADIO TOWER
CELLULAR OPERATOR C
40c
DIRECT SMSC CONNECTION
50c
WWW
42c
MASTER SWITCH
44c
BASE STATION
SMSC
43c
46c
48c
RADIO TOWER

FIG. 1A

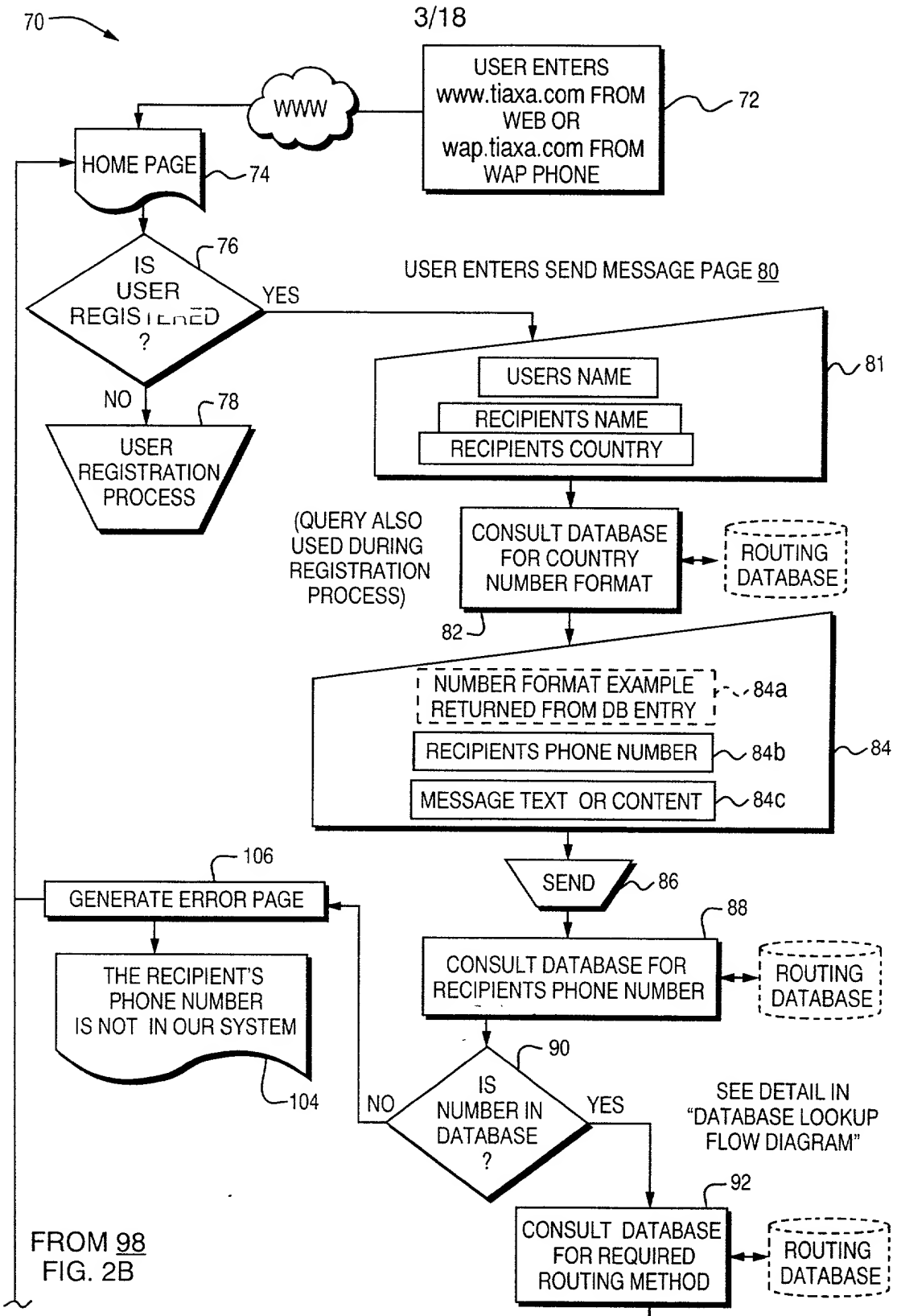
70
WWW
USER ENTERS www.tiaxa.com FROM WEB OR wap.tiaxa.com FROM WAP PHONE
72
HOME PAGE
74
IS USER REGISTERED ?
76
YES
NO
78
USER REGISTRATION PROCESS
USER ENTERS SEND MESSAGE PAGE 80
81
USERS NAME
RECIPIENTS NAME
RECIPIENTS COUNTRY
(QUERY ALSO USED DURING REGISTRATION PROCESS)
CONSULT DATABASE FOR COUNTRY NUMBER FORMAT
ROUTING DATABASE
82
NUMBER FORMAT EXAMPLE RETURNED FROM DB ENTRY
84a
RECIPIENTS PHONE NUMBER
84b
MESSAGE TEXT OR CONTENT
84c
84
SEND
86
88
CONSULT DATABASE FOR RECIPIENTS PHONE NUMBER
ROUTING DATABASE
90
IS NUMBER IN DATABASE ?
NO
YES
SEE DETAIL IN "DATABASE LOOKUP FLOW DIAGRAM"
106
GENERATE ERROR PAGE
THE RECIPIENT'S PHONE NUMBER IS NOT IN OUR SYSTEM
104
92
CONSULT DATABASE FOR REQUIRED ROUTING METHOD
ROUTING DATABASE
FROM 98
FIG. 2B
TO 94
FIG. 2B

FIG. 2A

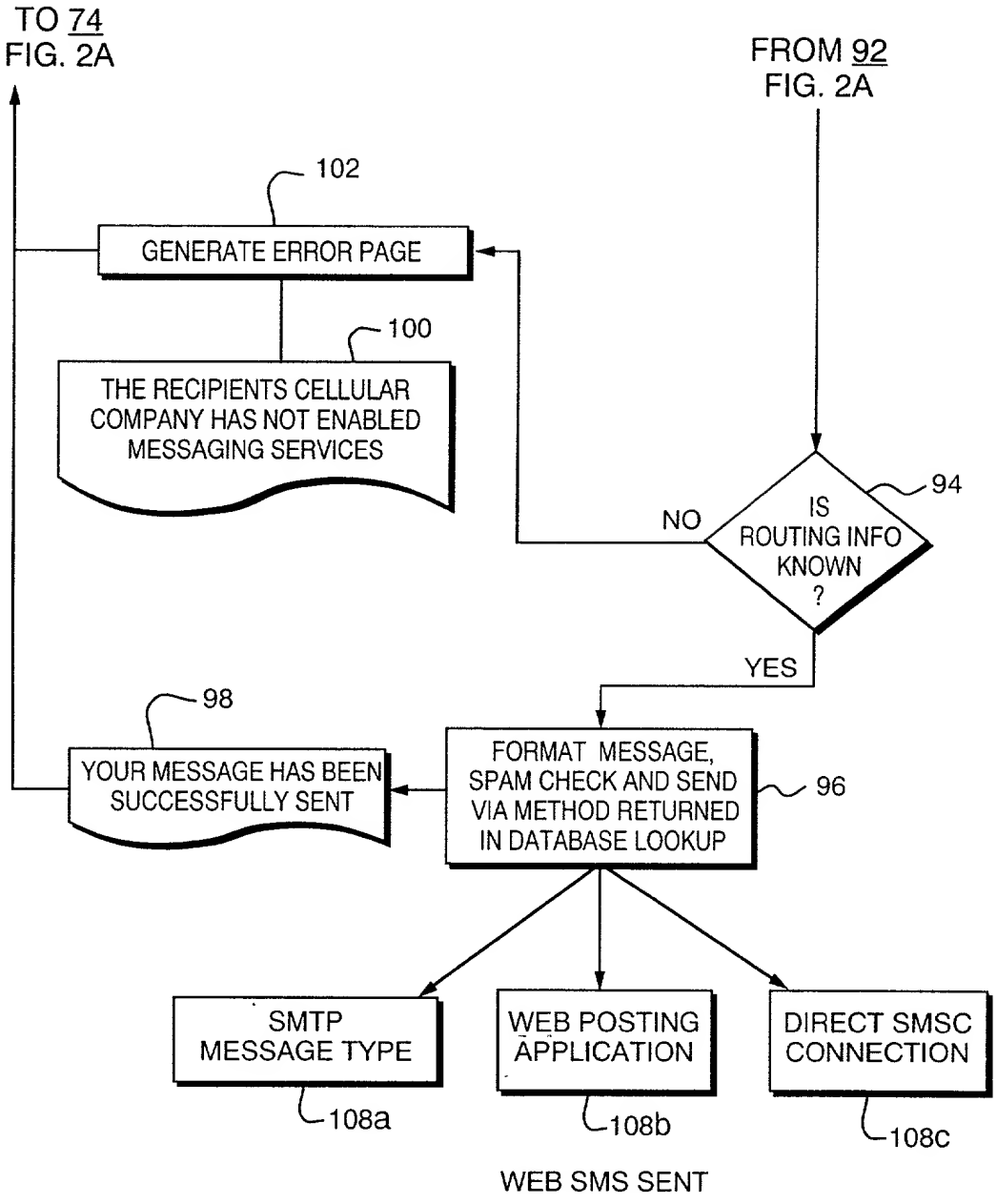
TO 74
FIG. 2A
FROM 92
FIG. 2A
102
GENERATE ERROR PAGE
100
THE RECIPIENTS CELLULAR COMPANY HAS NOT ENABLED MESSAGING SERVICES
NO
IS ROUTING INFO KNOWN ?
94
YES
98
YOUR MESSAGE HAS BEEN SUCCESSFULLY SENT
FORMAT MESSAGE, SPAM CHECK AND SEND VIA METHOD RETURNED IN DATABASE LOOKUP
96
SMTP MESSAGE TYPE
WEB POSTING APPLICATION
DIRECT SMSC CONNECTION
108a
108b
108c
WEB SMS SENT

FIG. 2B

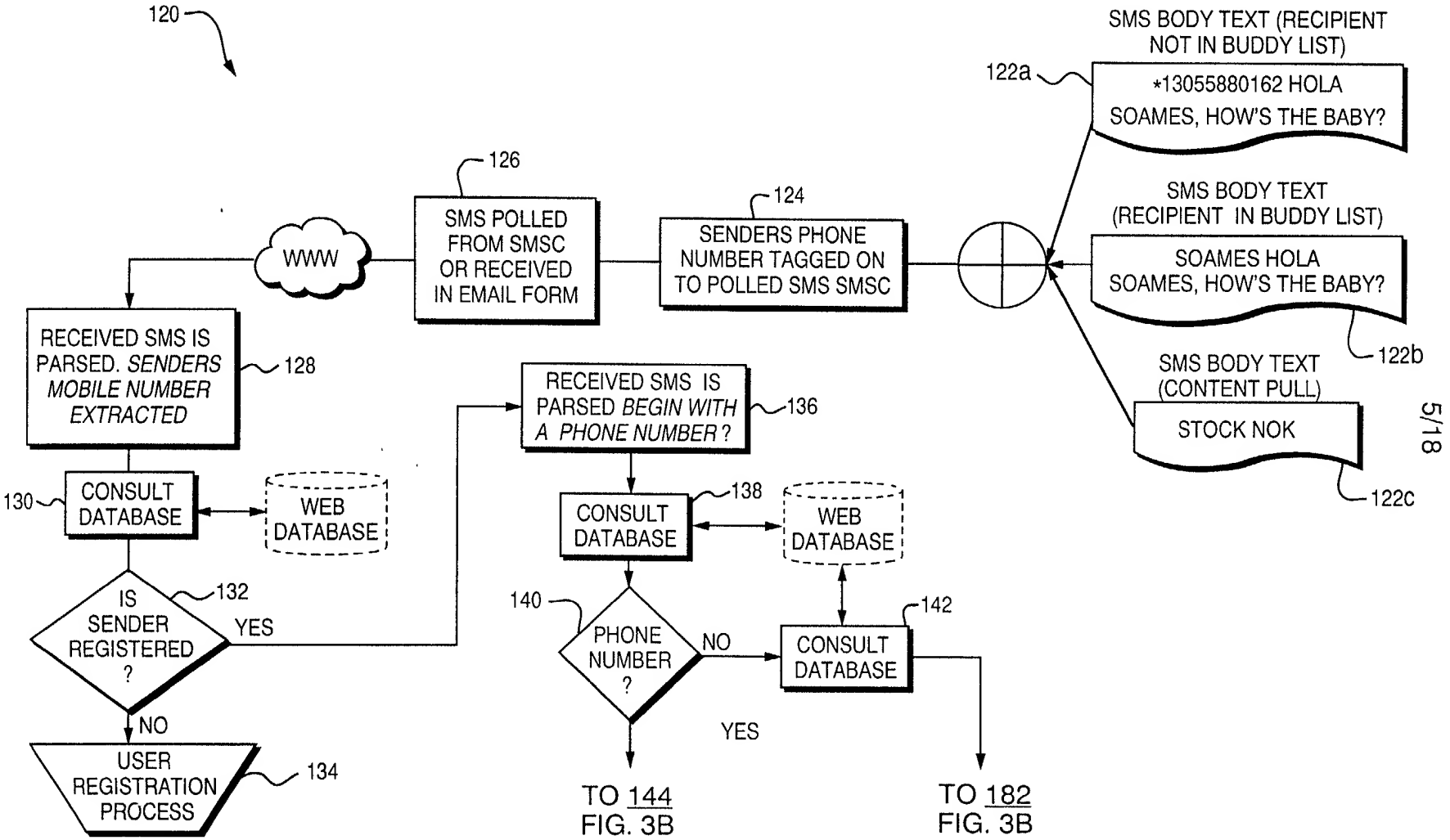
120
SMS BODY TEXT (RECIPIENT NOT IN BUDDY LIST)
122a
*13055880162 HOLA SOAMES, HOW'S THE BABY?
126
SMS POLLED FROM SMSC OR RECEIVED IN EMAIL FORM
124
SENDERS PHONE NUMBER TAGGED ON TO POLLED SMS SMSC
SMS BODY TEXT (RECIPIENT IN BUDDY LIST)
SOAMES HOLA SOAMES, HOW'S THE BABY?
122b
WWW
RECEIVED SMS IS PARSED. SENDERS MOBILE NUMBER EXTRACTED
128
SMS BODY TEXT (CONTENT PULL)
STOCK NOK
122c
RECEIVED SMS IS PARSED BEGIN WITH A PHONE NUMBER ?
136
130
CONSULT DATABASE
WEB DATABASE
138
CONSULT DATABASE
WEB DATABASE
IS SENDER REGISTERED ?
132
YES
140
PHONE NUMBER ?
NO
142
CONSULT DATABASE
NO
USER REGISTRATION PROCESS
134
YES
TO 144 FIG. 3B
TO 182 FIG. 3B

FIG. 3A

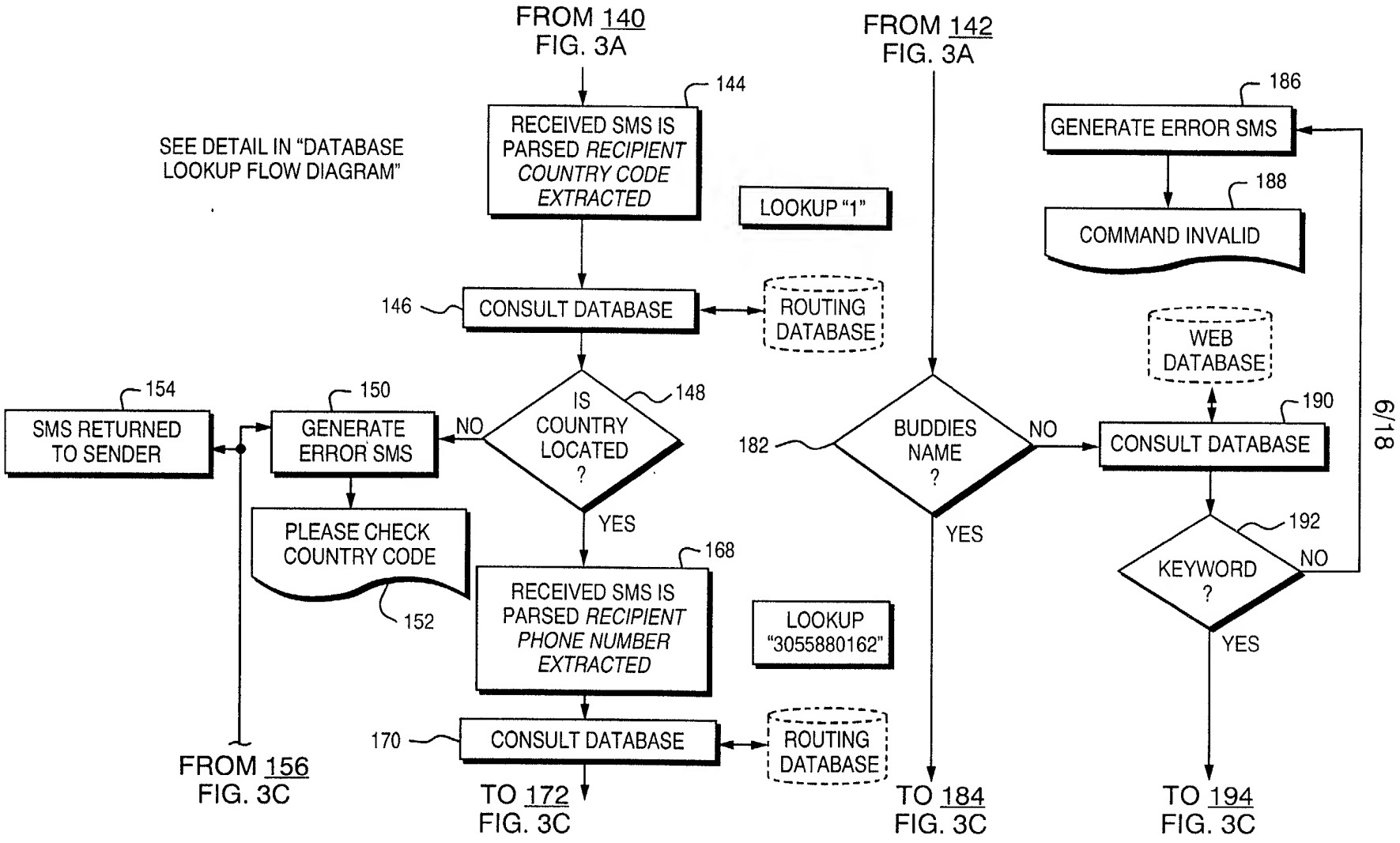
FROM 140
FIG. 3A
FROM 142
FIG. 3A
144
RECEIVED SMS IS PARSED *RECIPIENT COUNTRY CODE EXTRACTED*
SEE DETAIL IN "DATABASE LOOKUP FLOW DIAGRAM"
LOOKUP "1"
146
CONSULT DATABASE
ROUTING DATABASE
154
SMS RETURNED TO SENDER
150
GENERATE ERROR SMS
NO
148
IS COUNTRY LOCATED ?
YES
PLEASE CHECK COUNTRY CODE
152
168
RECEIVED SMS IS PARSED *RECIPIENT PHONE NUMBER EXTRACTED*
LOOKUP "3055880162"
170
CONSULT DATABASE
ROUTING DATABASE
FROM 156
FIG. 3C
TO 172
FIG. 3C
182
BUDDIES NAME ?
NO
YES
TO 184
FIG. 3C
186
GENERATE ERROR SMS
188
COMMAND INVALID
WEB DATABASE
190
CONSULT DATABASE
192
KEYWORD ?
NO
YES
TO 194
FIG. 3C

FIG. 3B

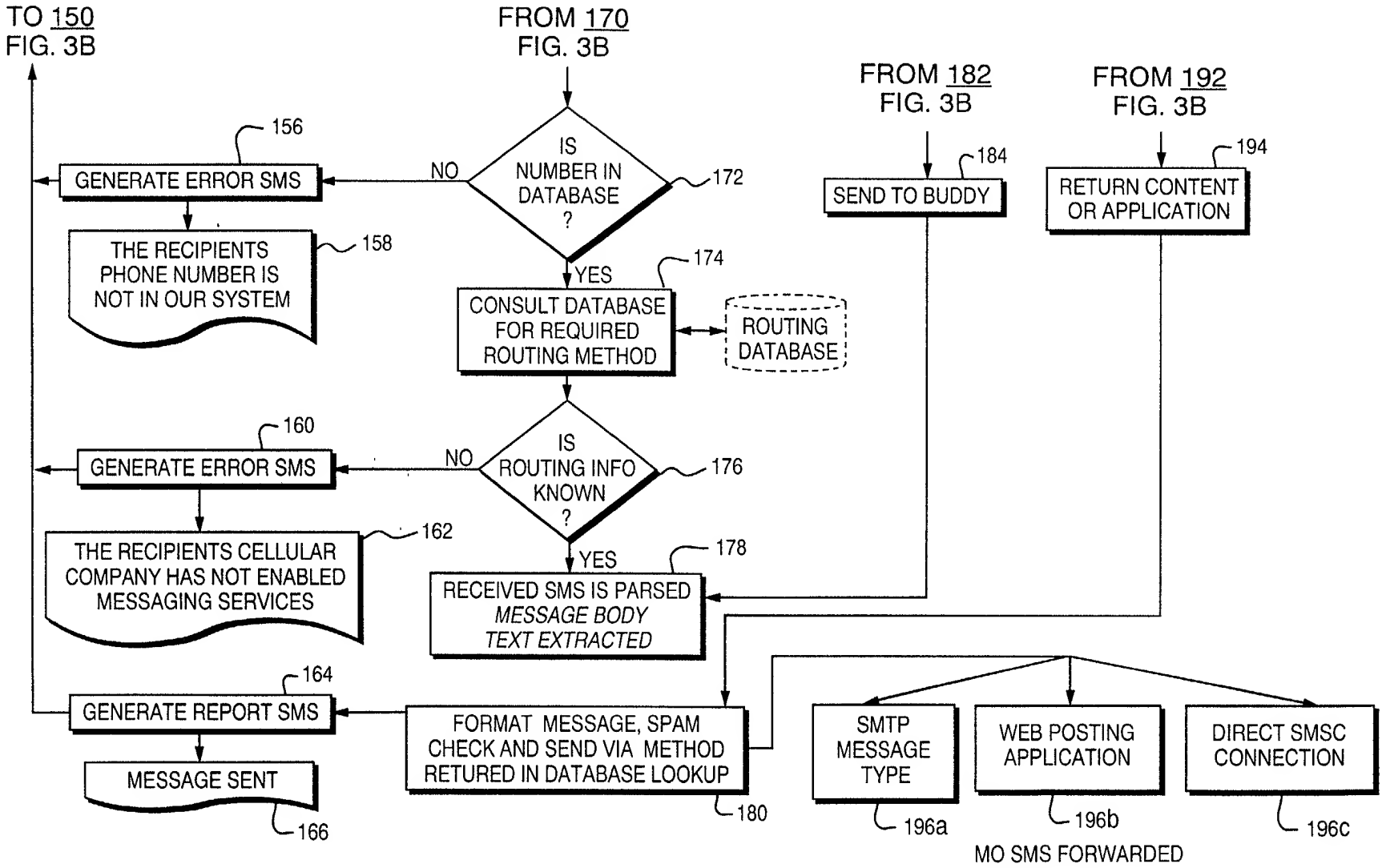
TO 150
FIG. 3B
FROM 170
FIG. 3B
FROM 182
FIG. 3B
FROM 192
FIG. 3B
IS NUMBER IN DATABASE ?
172
NO
156
GENERATE ERROR SMS
158
THE RECIPIENTS PHONE NUMBER IS NOT IN OUR SYSTEM
YES
174
CONSULT DATABASE FOR REQUIRED ROUTING METHOD
ROUTING DATABASE
184
SEND TO BUDDY
194
RETURN CONTENT OR APPLICATION
IS ROUTING INFO KNOWN ?
176
NO
160
GENERATE ERROR SMS
162
THE RECIPIENTS CELLULAR COMPANY HAS NOT ENABLED MESSAGING SERVICES
YES
178
RECEIVED SMS IS PARSED
MESSAGE BODY
TEXT EXTRACTED
164
GENERATE REPORT SMS
MESSAGE SENT
166
FORMAT MESSAGE, SPAM CHECK AND SEND VIA METHOD RETURED IN DATABASE LOOKUP
180
SMTP MESSAGE TYPE
196a
WEB POSTING APPLICATION
196b
DIRECT SMSC CONNECTION
196c
MO SMS FORWARDED

FIG. 3C

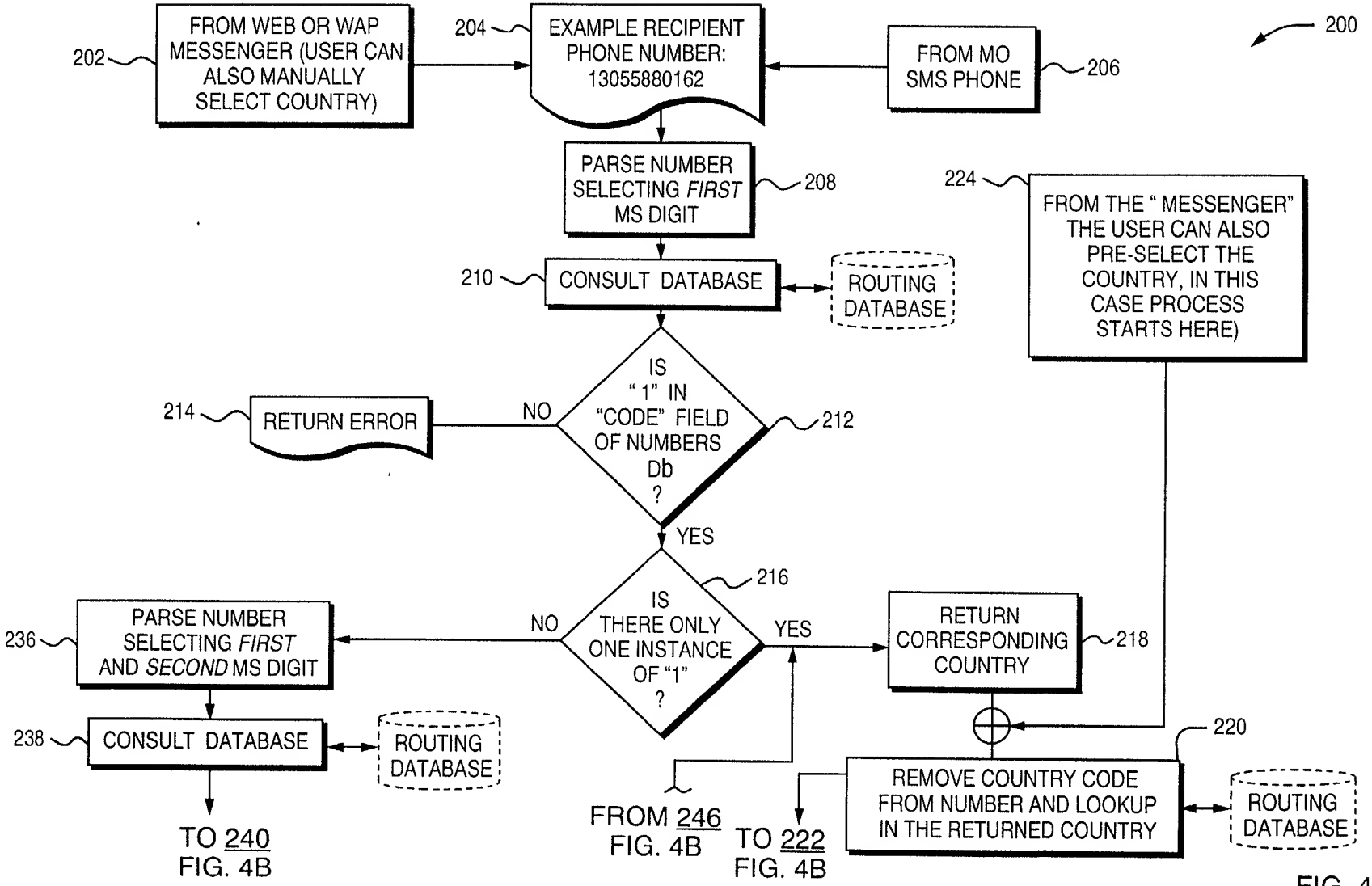
200
202
FROM WEB OR WAP MESSENGER (USER CAN ALSO MANUALLY SELECT COUNTRY)
204
EXAMPLE RECIPIENT PHONE NUMBER: 13055880162
206
FROM MO SMS PHONE
208
PARSE NUMBER SELECTING FIRST MS DIGIT
210
CONSULT DATABASE
ROUTING DATABASE
224
FROM THE " MESSENGER" THE USER CAN ALSO PRE-SELECT THE COUNTRY, IN THIS CASE PROCESS STARTS HERE)
212
IS " 1" IN "CODE" FIELD OF NUMBERS Db ?
NO
214
RETURN ERROR
YES
216
IS THERE ONLY ONE INSTANCE OF "1" ?
NO
YES
236
PARSE NUMBER SELECTING FIRST AND SECOND MS DIGIT
238
CONSULT DATABASE
ROUTING DATABASE
TO 240 FIG. 4B
FROM 246 FIG. 4B
TO 222 FIG. 4B
218
RETURN CORRESPONDING COUNTRY
220
REMOVE COUNTRY CODE FROM NUMBER AND LOOKUP IN THE RETURNED COUNTRY
ROUTING DATABASE

FIG. 4A

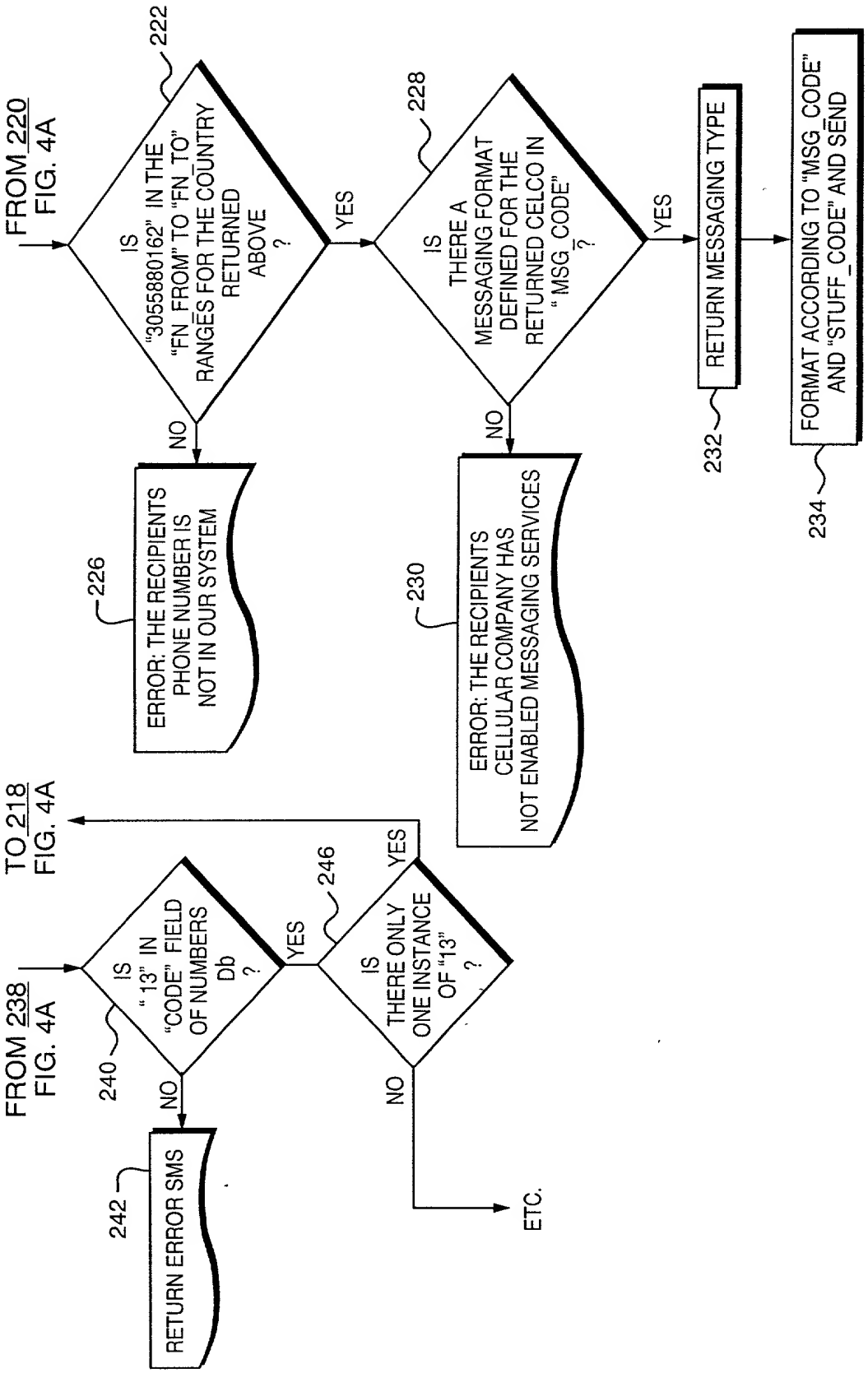
FROM 220
FIG. 4A
222
IS "3055880162" IN THE "FN_FROM" TO "FN_TO" RANGES FOR THE COUNTRY RETURNED ABOVE ?
YES
NO
228
IS THERE A MESSAGING FORMAT DEFINED FOR THE RETURNED CELCO IN " MSG_CODE" ?
YES
NO
226
ERROR: THE RECIPIENTS PHONE NUMBER IS NOT IN OUR SYSTEM
230
ERROR: THE RECIPIENTS CELLULAR COMPANY HAS NOT ENABLED MESSAGING SERVICES
232
RETURN MESSAGING TYPE
234
FORMAT ACCORDING TO "MSG_CODE" AND "STUFF_CODE" AND SEND
TO 218
FIG. 4A
FROM 238
FIG. 4A
240
IS " 13" IN "CODE" FIELD OF NUMBERS Db ?
YES
NO
246
IS THERE ONLY ONE INSTANCE OF "13" ?
YES
NO
242
RETURN ERROR SMS
ETC.

FIG. 4B

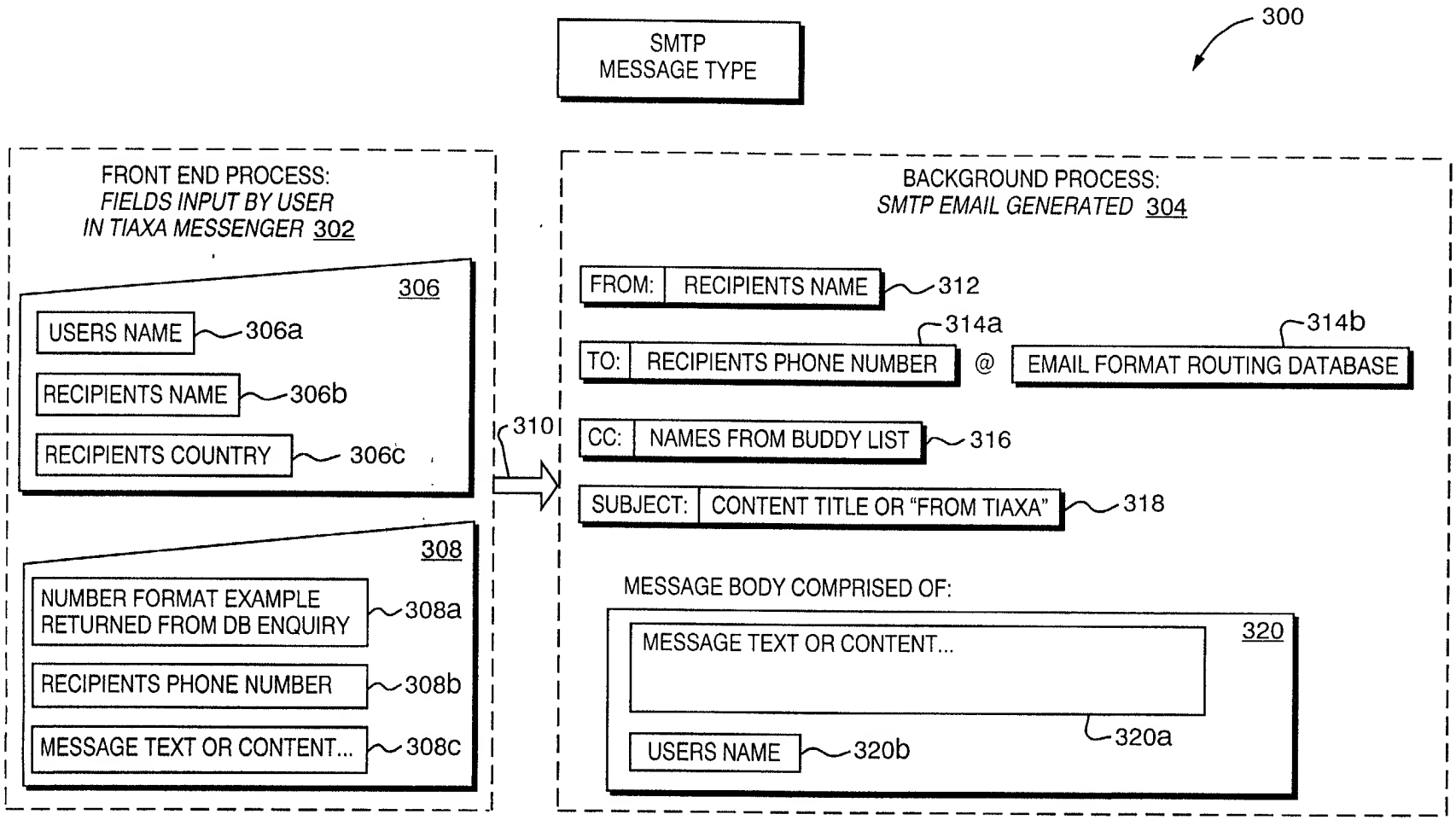
SMTP
MESSAGE TYPE
300
FRONT END PROCESS:
FIELDS INPUT BY USER
IN TIAXA MESSENGER 302
306
USERS NAME
306a
RECIPIENTS NAME
306b
RECIPIENTS COUNTRY
306c
310
308
NUMBER FORMAT EXAMPLE
RETURNED FROM DB ENQUIRY
308a
RECIPIENTS PHONE NUMBER
308b
MESSAGE TEXT OR CONTENT...
308c
BACKGROUND PROCESS:
SMTP EMAIL GENERATED 304
FROM:
RECIPIENTS NAME
312
314a
314b
TO:
RECIPIENTS PHONE NUMBER
@
EMAIL FORMAT ROUTING DATABASE
CC:
NAMES FROM BUDDY LIST
316
SUBJECT:
CONTENT TITLE OR "FROM TIAXA"
318
MESSAGE BODY COMPRISED OF:
320
MESSAGE TEXT OR CONTENT...
320a
USERS NAME
320b

FIG. 5

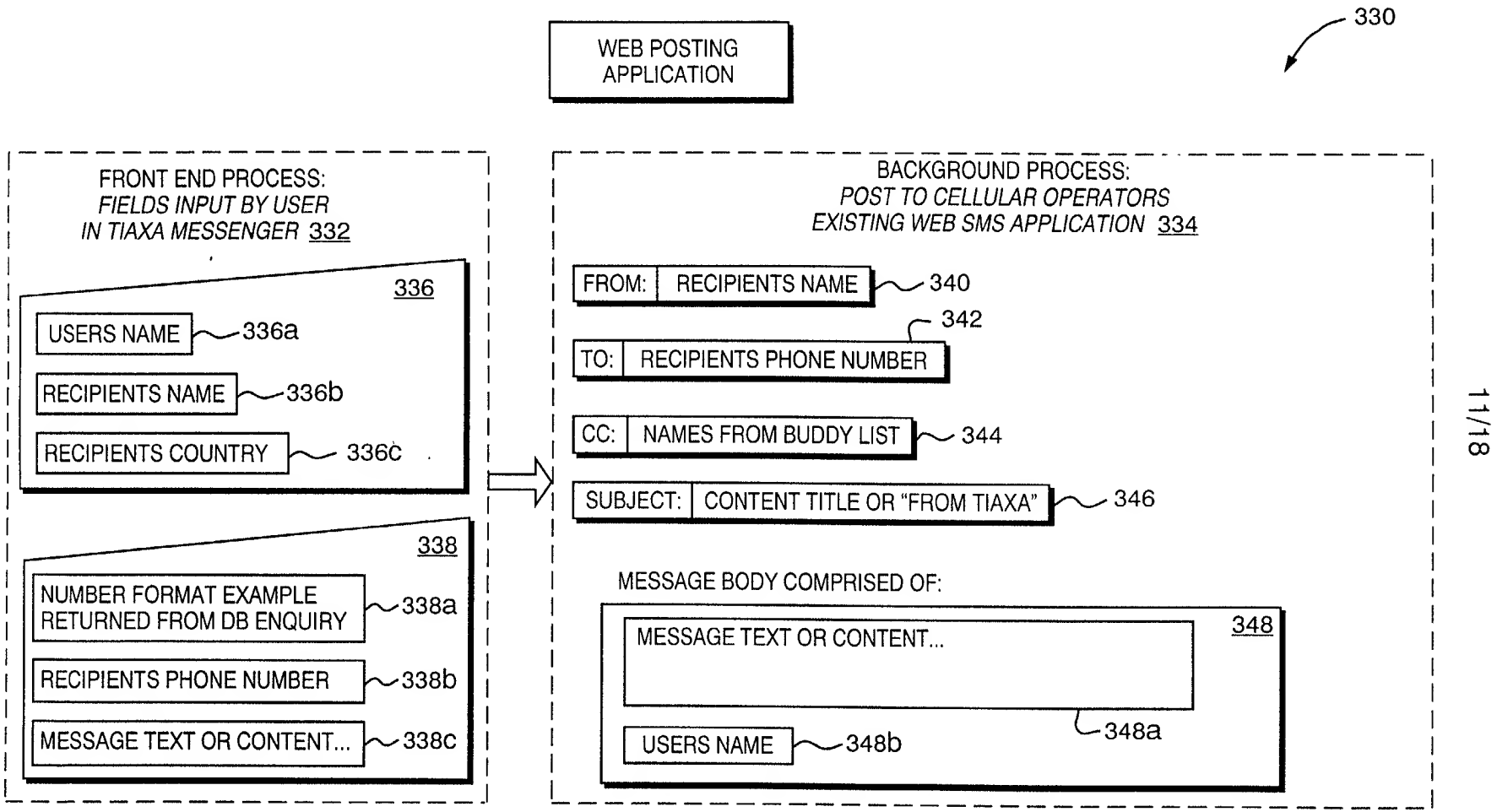
WEB POSTING APPLICATION
330
FRONT END PROCESS:
FIELDS INPUT BY USER
IN TIAXA MESSENGER 332
336
USERS NAME
336a
RECIPIENTS NAME
336b
RECIPIENTS COUNTRY
336c
338
NUMBER FORMAT EXAMPLE RETURNED FROM DB ENQUIRY
338a
RECIPIENTS PHONE NUMBER
338b
MESSAGE TEXT OR CONTENT...
338c
BACKGROUND PROCESS:
POST TO CELLULAR OPERATORS
EXISTING WEB SMS APPLICATION 334
FROM: RECIPIENTS NAME
340
342
TO: RECIPIENTS PHONE NUMBER
CC: NAMES FROM BUDDY LIST
344
SUBJECT: CONTENT TITLE OR "FROM TIAXA"
346
MESSAGE BODY COMPRISED OF:
348
MESSAGE TEXT OR CONTENT...
348a
USERS NAME
348b

FIG. 6

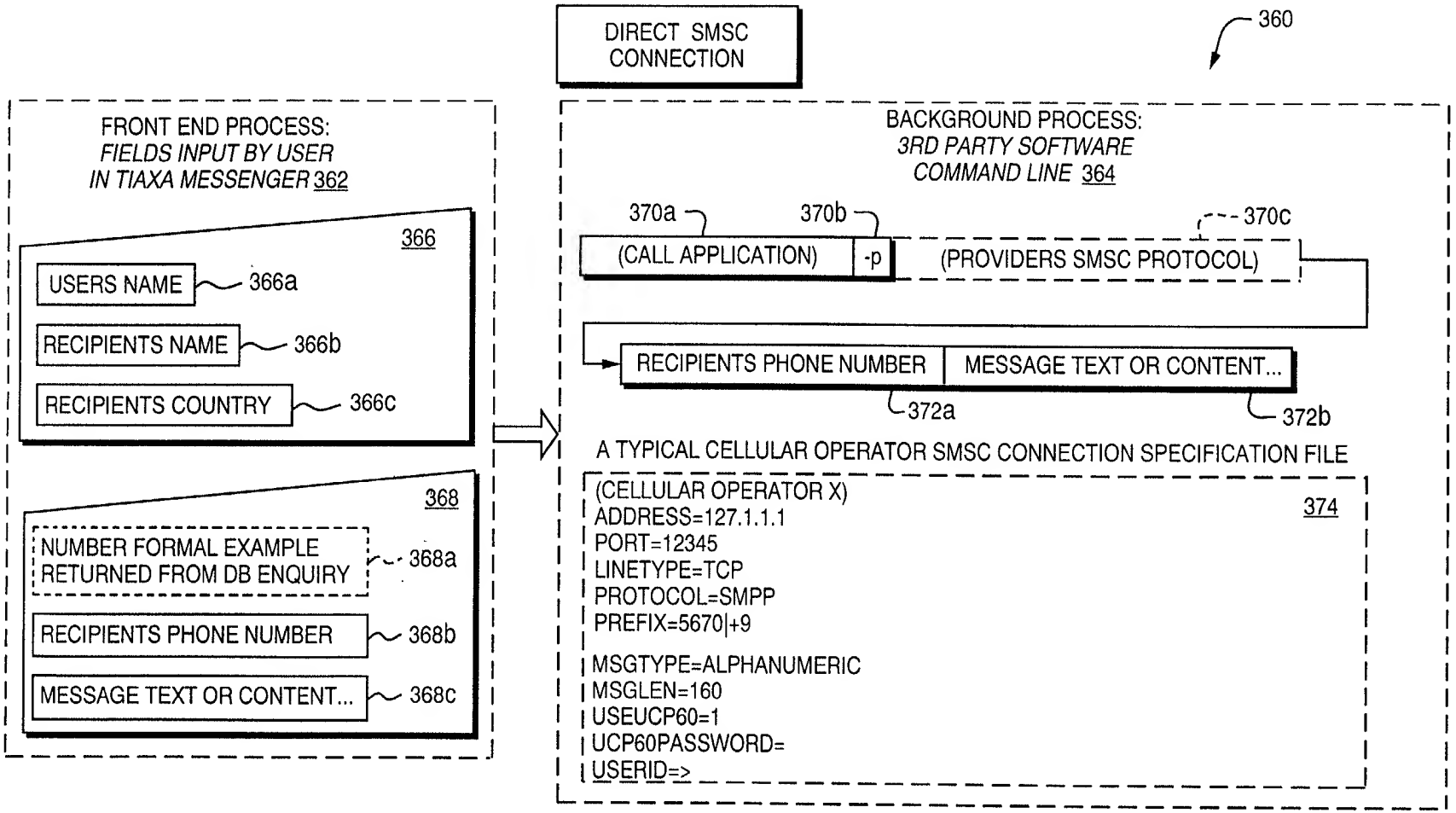
DIRECT SMSC CONNECTION
360
FRONT END PROCESS:
FIELDS INPUT BY USER
IN TIAXA MESSENGER 362
366
USERS NAME
366a
RECIPIENTS NAME
366b
RECIPIENTS COUNTRY
366c
368
NUMBER FORMAL EXAMPLE RETURNED FROM DB ENQUIRY
368a
RECIPIENTS PHONE NUMBER
368b
MESSAGE TEXT OR CONTENT...
368c
BACKGROUND PROCESS:
3RD PARTY SOFTWARE
COMMAND LINE 364
370a
370b
370c
(CALL APPLICATION)
-p
(PROVIDERS SMSC PROTOCOL)
RECIPIENTS PHONE NUMBER
MESSAGE TEXT OR CONTENT...
372a
372b
A TYPICAL CELLULAR OPERATOR SMSC CONNECTION SPECIFICATION FILE
374
(CELLULAR OPERATOR X)
ADDRESS=127.1.1.1
PORT=12345
LINETYPE=TCP
PROTOCOL=SMPP
PREFIX=5670|+9
MSGTYPE=ALPHANUMERIC
MSGLEN=160
USEUCP60=1
UCP60PASSWORD=
USERID=>

FIG. 7

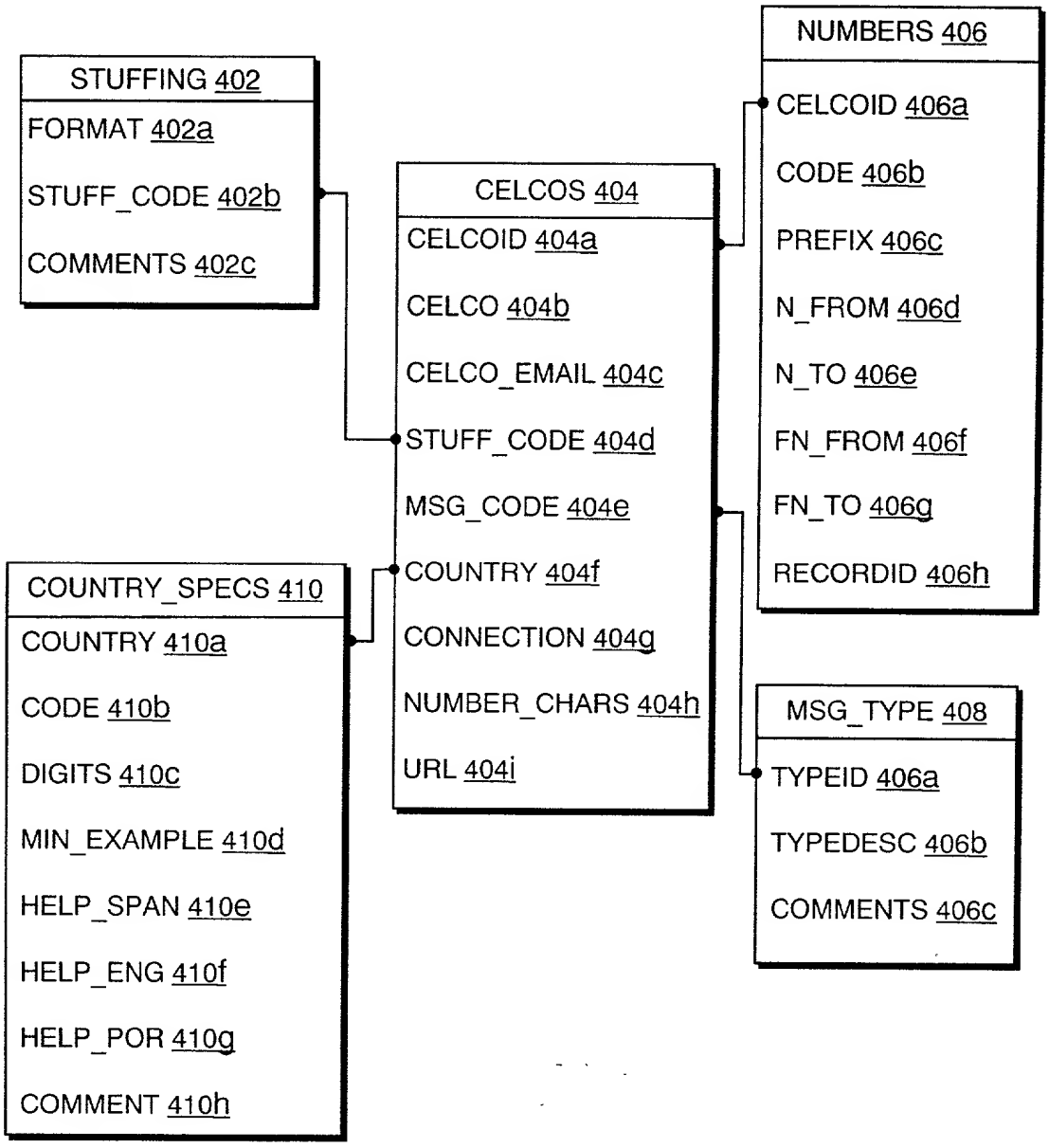
STUFFING 402
FORMAT 402a
STUFF_CODE 402b
COMMENTS 402c
CELCOS 404
CELCOID 404a
CELCO 404b
CELCO_EMAIL 404c
STUFF_CODE 404d
MSG_CODE 404e
COUNTRY 404f
CONNECTION 404g
NUMBER_CHARS 404h
URL 404i
NUMBERS 406
CELCOID 406a
CODE 406b
PREFIX 406c
N_FROM 406d
N_TO 406e
FN_FROM 406f
FN_TO 406g
RECORDID 406h
COUNTRY_SPECS 410
COUNTRY 410a
CODE 410b
DIGITS 410c
MIN_EXAMPLE 410d
HELP_SPAN 410e
HELP_ENG 410f
HELP_POR 410g
COMMENT 410h
MSG_TYPE 408
TYPEID 406a
TYPEDESC 406b
COMMENTS 406c

FIG. 8

EXAMPLE OF CONTENTS OF "STUFFING" TABLE 402

FORMAT 402a	STUFF_CODE 402b	COMMENTS 402c
NO COMMENTS	0	
(number)@email	1	
(prefix)(number)@email	2	
(stuffed"0")(prefix"15")(number)@email	3	
(stuffed"1")(area)(number)@email	4	
(stuffed"15")(number)@email	5	
(stuffed"52")(prefix)(number)@email	6	
(stuffed"0")(prefix)(number)@email	7	
"mensajes"@email	8	CELCO X...ALL EMAILS ARE SENT TO mensajes@email
"nexmail"@email	9	CELCO Y...ALL EMAILS ARE SENT TO nexmail@email
(stuffed "706")(number)@email	10	CELCO W
(stuffed "076")(number)@email	11	CELCO W
(NUMBER)	12	http://web.wepostapp.com/
(NUMBER)	13	application

FIG. 9

EXAMPLE OF CONTENTS OF "CELCOS" TABLE 404

CELCOID 404a	CELCO 404b	CELCO_EMAIL 404c	STUFF_CODE 404d	MSG_CODE 404e	COUNTRY 404f	CONNECTION 404g	NUMBER_CHARS 404h	URL 404i
CTIARGE	CTI argentina	cti.comar	2	0	AR	email	100	www.cti.com
BAHACELL	Baja celular	bajacelular.commx	6	0	MX	email	100	www.baja.com
IUSCELL	Iusacell	iusacell.commx	2	0	MX	email	100	www.iusa.com
NORCEL	Norcel	norcel.commx	6	0	MX	email	100	www.norcel.com
PORTACEL	Portatel	unknown	0	0	MX		100	www.porta.com
TELCELMX	Telcel Mexico	unknown	0	0	MX		120	www.telcel.com
BELLPE	BellSouth Peru	unknown	0	0	PE		115	www.bspe.com
NEXTELPERU	Nextel Peru	nextel.compe	9	3	PE	email	115	www.nxtl.com
TELEFOPE	Telefonia Peru	telefon.compe	8	4	PE	email	130	www.telepe.com
6462	360 COMMUNICATIONS-VIRGINIA	atel.com	2	0	US	email	120	www.atel.com
6228	AB CELLULAR HOLDING	mobile.att.net	2	0	US	SMPP	120	www.att.com

FIG. 10

EXAMPLE OF CONTENTS OF "NUMBERS" TABLE 406

CELCOID 406a	CODE 406b	PREFIX 406c	N_FROM 406d	N_TO 406e	FN_FROM 406f	FN_TO 406g	RECORDID 406h
TELEFOPE	51	1	8600000	8699999	18600000	18699999	1
TELEFPPE	51	1	9600000	9999999	19900000	19999999	9
BELLPE	51	1	9500000	9599999	19500000	19599999	15
NEXTELPERU	51	1	8100000	8199999	18100000	18199999	16
BAHACELL	52	1	1010000	1016999	11010000	11016999	17
BAHACELL	52	6	6910000	6919999	66910000	66919999	99
BAHACELL	52	113	95000	96999	11395000	11396999	103
IUSACELL	52	4	7280000	7181999	47280000	47281999	462
IUSACELL	52	4	7282000	7282999	47282000	47282999	463
NORCEL	52	17	450000	459999	17450000	17459999	1029
NORCEL	52	17	460000	469999	17460000	17469999	1030
NORCEL	52	17	580000	589999	17580000	17589999	1031
NORCEL	52	169	10000	19999	16910000	16919999	1032
PORTATEL	52	93	906000	909999	93906000	93909999	1190
PORTATEL	52	93	930000	935999	93930000	93935999	1191
TELCELMX	52		59840000	59849999	59840000	59849999	3805
TELCELMX	52		59910000	59919999	59910000	59919999	3906
TELCELMX	52		59950000	59959999	59950000	59959999	3807
TELCELMX	52		59970000	59979999	59970000	59979999	3808
CTIARGE	54	11	41500000	41509999	1141500000	1141509999	3809
6462	1	804	9890000	9899999	8049890000	8049899999	8120
6462	1	804	9960000	9969999	8049960000	8049969999	8121
6228	1	310	2000000	2009999	310200000	3102009999	8122

FIG. 11

EXAMPLE OF CONTENTS OF "MESSAGE TYPE" TABLE 408

TYPEID 408a	TYPEDESC 408b	COMMENTS 408c	APPLICATION DESTINATION 408d
0	Put [Message] In The Email Body	normal	
1	Put [Message] In The Email Subject		
2	Put [subject] [Message] In The Email Subject		
3	Put [Stuffed Number [Message]] in Email Subject	celco A	
4	Put [Stuffed number] in Email Subject, [Message] in The Email Body	celco Z	
5	Call Web posting:	Celco B	http://web.wepostapp.com/
6	Call direct SMSC connection application:	Celco C	application

FIG. 12

WO 97/12680 PCT/US96/15787

EXAMPLE OF CONTENTS OF "COUNTRY SPECS." TABLE 410

COUNTRY 410a	CODE 410b	DIGITS 410c	MIN_EXAMPLE 410d	HELP_SPAN 410e	HELP_ENG 410f	HELP_PORT 410g	COMMENTS 410h
AR	54	10	11(SIN " 15 ") 412356	HELP TEXT IN SPANISH	HELP TEXT IN ENGLISH	HELP TEXT IN PORTUGESE	NOTES
BR	55	10	2712345				
EEUU	1	10	305123456				

FIG. 13